Appl. No. 10/605,422
Reply to Office action of August 13, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

5   1 (currently amended): A method for processing an image to increase sharpness of the image without changing hue characteristics, the method comprising:

(a) performing a transformation process to transform an original image signal into CIE XYZ colorimetric channels;

(b) forming a luminance channel Y;

10   (c) applying a filter on the luminance channel Y to obtain a processed luminance channel Y';

(d) computing processed colorimetric channels X' and Z' based on the processed luminance channel Y', wherein a relationship between the processed colorimetric channel X' and the colorimetric channel X satisfies the

15   equation $X'=(X/Y)*Y'$; and

(e) performing an inverse transformation process to transform the processed colorimetric channels X'Y'Z' into a processed image signal.

2 (original): The method of claim 1 wherein the filter applied in step (c) is an unsharp

20   masking (USM) filter.

3 (original): The method of claim 1 wherein the filter applied in step (c) is a sharpness filter.

25   4 (original): The method of claim 1 wherein in step (a) the transformation process comprises transforming RGB values of the original image signal into CIE XYZ colorimetric channels.

5 (original): The method of claim 4 wherein in step (e) the inverse transformation

30   process comprises transforming the processed colorimetric channels X'Y'Z' into

2

Appl. No. 10/605,422
Reply to Office action of August 13, 2007

R'G'B' values of the processed image signal.

6 (original): The method of claim 1 wherein in step (a) the transformation process comprises transforming CMYK values of the original image signal into CIE

5   XYZ colorimetric channels.

7 (original): The method of claim 6 wherein in step (e) the inverse transformation process comprises transforming the processed colorimetric channels X'Y'Z' into C'M'Y'K' values of the processed image signal.

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8 (cancelled).

9 (original): The method of claim 1 wherein in step (d) a relationship between the processed colorimetric channel Z' and the colorimetric channel Z satisfies the

15   equation $Z'=(Z/Y)*Y'$.

10 (original): An image processing apparatus for implementing the method of claim 1.

11 (new): A method for processing an image to increase sharpness of the image

20   without changing hue characteristics, the method comprising:
         (a) performing a transformation process to transform an original image signal
             into CIE XYZ colorimetric channels;
         (b) forming a luminance channel Y;
         (c) applying a filter on the luminance channel Y to obtain a processed luminance

25   channel Y';
         (d) computing processed colorimetric channels X' and Z' based on the processed
             luminance channel Y', wherein a relationship between the processed
             colorimetric channel Z' and the colorimetric channel Z satisfies the equation
             $Z'=(Z/Y)*Y'$; and

30   (e) performing an inverse transformation process to transform the processed

3

Appl. No. 10/605,422
Reply to Office action of August 13, 2007

colorimetric channels X'Y'Z' into a processed image signal.

12 (new): The method of claim 11 wherein the filter applied in step (c) is an unsharp masking (USM) filter.

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13 (new): The method of claim 11 wherein the filter applied in step (c) is a sharpness filter.

14 (new): The method of claim 11 wherein in step (a) the transformation process

10   comprises transforming RGB values of the original image signal into CIE XYZ colorimetric channels.

15 (new): The method of claim 14 wherein in step (e) the inverse transformation process comprises transforming the processed colorimetric channels X'Y'Z' into

15   R'G'B' values of the processed image signal.

16 (new): The method of claim 11 wherein in step (a) the transformation process comprises transforming CMYK values of the original image signal into CIE XYZ colorimetric channels.

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17 (new): The method of claim 16 wherein in step (e) the inverse transformation process comprises transforming the processed colorimetric channels X'Y'Z' into C'M'Y'K' values of the processed image signal.

25   18 (new): An image processing apparatus for implementing the method of claim 11.

4